

PALÆONTOLOGICAL NOTES.

BY HEBER A. LONGMAN, F.L.S., C.M.Z.S. (Director).

(Plate XXIX.)

SPECIMENS FROM A WELL AT BRIGALOW,

IN March, 1929, an interesting collection of fossil fragments was received from Brigalow, Darling Downs, Queensland, through the kindness of Messrs. Zeller Brothers. The specimens were obtained during the sinking of a well on their property at Brigalow. Several beds of sand were found from "16 feet down to 100 feet," and each bed yielded fossil bones.

The fragments from this well represent at least seven different vertebrates. Perhaps the most significant of these are fragments making about half of a cranium of the extraordinary marsupial for which the writer created the genus *Euryzygoma* in 1921.¹ The fossils sent by Messrs. Zeller Brothers may be recorded as follows:—

***Euryzygoma dunense*.**

Compared with the original Brigalow cranium previously described (*loc. cit.*), this is a far younger animal. Although the zygomatic arches are distorted and incomplete, the distinctive features of the genus are well marked. In this marsupial the inferior lateral processes of the anterior part of the zygomata reach a development which is without a parallel among other mammals, and this is accompanied by a distinctive structure of the zygomatic processes of the maxillæ. The architecture of these accessory processes was described in detail in the original paper, and in this region the differences between *Euryzygoma* and the species of *Nototherium* are obvious at a glance when direct comparison is made.

In view of these and other distinctive features that were set forth in the detailed description of the first Brigalow skull, it is somewhat surprising that a writer in "Nature" (May 19th, 1921, p. 372) should question the generic separation of this marsupial from *Nototherium mitchelli* and *N. tasmanicum*. Obviously *Euryzygoma* is an extremely specialised member of the *Nototherium* group and is an example of the evolution of a bizarre type. Probably the remarkable development of the zygomatic processes reached its maximum in adult males, but the total material received shows that these special features were present in younger forms. On these structures alone generic status would be justified. A specimen consisting of a right maxilla with three molars, found at Ehlma Siding, near Brigalow, and forwarded by Mr. Thomas Jack in October, 1923, also exhibits the distinctive features of *Euryzygoma*. This specimen (F. 1520), which is highly polished, was found "in quick-sand."

A comparison may appropriately be made between the extreme lateral development of the arches in *Euryzygoma* with the dependent processes in certain Entelodonts described by E. L. Troxell,² of which *Megachærus zygomaticus* is a remarkable example.

¹ 1921, Longman, Mem. Qld. Mus., vol. vii, pp. 65-80.

² 1920, E. L. Troxell, Amer. Journ. Sci., vol. 1, p. 433.

In view of the present writer's suggestion (1921, p. 73) that the extraordinary lateral extensions in *Euryzygoma* supported "cheek pouches," it is of interest to note that Troxell, following Lull's remarks regarding similar structures in the Ceratopsia, notes the possibility of "cheek pouches" as an explanation of the dependent processes in Entelodonts (*loc. cit.*, p. 255).

The full molar series is present in the cranial remains sent by Messrs. Zeller Brothers, but one of the subtriangular premolars is incomplete. A tract of dentine is exposed on the hind lobe of the last molar, but the state of wear on the series is very much less than in the first-described cranium. The premaxillæ are missing, and the fragments of the occipital and parietal regions are so badly crushed that they do not lend themselves to useful reconstruction.

Diprotodon australis.

Dorsal vertebra. This specimen was in four pieces, but now forms a fairly complete vertebra representing a *Diprotodon* fully as large as the well-known cast of this marsupial supplied by the Museum of South Australia, Adelaide. Incidentally it may be mentioned that we have individual bones which far surpass the dimensions of this cast, and one of them, presented by Mr. Thomas Jack, of Dalby, was recorded by the writer in 1924.³ This vertebra from Brigalow is thinly covered with a deposit of calcareous earth, which is very characteristic of some specimens found near the Condamine River on or near the surface.

Macropus anak.

Incomplete left incisor of an aged individual. This specimen has the bluish tint, corresponding to Ridgway's "cinereus," which is frequently seen in the enamel of fossil macropodes from the Darling Downs. The facet of wear on the inner surface, caused by the movement of the two rami and made possible by the non-rigidity of the symphysis, is well marked on this incisor. The significance of this feature in present-day marsupials has been interestingly dealt with by C. Anderson.⁴

Fragments representing an almost complete humerus and a femur are tentatively placed with this species, whilst a portion of a pelvic girdle with a perfect acetabulum represents either a younger individual or one of the smaller species.

Chelonian fragments.

Three small pieces of a carapace (F. 2119) are evidently conspecific with the type material of the extinct Chelonian described by the late C. W. De Vis as *Chelymys uberrima*,⁵ but which should be more correctly known as *Emydura uberrima*. The largest shard is about 50 mm. by 40 mm. These small fragments show that the sulci or grooves between the horny shields on the carapace are deep and well defined, very much more so than in *Emydura macquarrii* and even more than in some species of *Chelodina*. In this respect they resemble the latter genus. There are no prominent rugosities on the shards, but vermicular impressions are noticeable.

Another specimen from Brigalow (F. 2119) is a fairly complete right ilium of a Chelonian, which is much more robust in the shaft than the ilium in an exceptionally large specimen of *Chelodina expansa*, the carapace of which is 380 mm. in length.

³ 1924, Longman, Mem. Qld. Mus., viii, p. 17.

⁴ 1927, C. Anderson, Austr. Zoologist, v, pp. 105-112.

⁵ 1897, De Vis, Ann. Qld. Mus., No. 3, p. 3.

A still larger specimen of an ilium in the Museum collection, for which we have no precise locality, shows that the freshwater Chelonians of the past were giants compared with those of to-day.

Some half-a-dozen very fragmentary shards from Messrs. Zeller Brothers' series cannot be satisfactorily identified.

F. Chapman has referred a fossil east of a tortoise found in a bed of ironstone at Carapook, Victoria,⁶ to the genus *Emydura*, and Lydekker has recorded both *Emydura* and *Chelodina* from Australia.⁷

Pallimnarchus pollens De Vis.

This extinct crocodile is represented by an incomplete tooth and two fragments of scutes (F. 2118).

Fish Remains.

These consist of two anterior dorsal spines. One of these (F. 2120) has a serrated anterior edge and appears to be allied to the common "freshwater eatfish" or "dewfish," *Tandanus tandanus*. In the Museum collection there are two other spines from Chinehilla (F. 16-1180) which have been registered as *Tandanus* sp., but which are considerably larger than the spines of the present-day species.

The other dorsal spine from Brigalow has been tentatively recorded as *Oligorus* sp. (F. 2122). In our old collections we have several fossil specimens from the Darling Downs which represent a fish allied to or identical with the Murray Cod of to-day, *Oligorus macquariensis*.

RHÆTOSAURUS BROWNEI.

(Plate XXIX.)

Opportunity is taken to illustrate the remains of the Queensland Jurassic Dinosaur *Rhætosaurus brownei* as now on exhibition in this Museum (Plate XXIX, figures 1 and 2). A large painting in oils, showing the probable appearance in life of these giant herbivorous Dinosaurs and the characteristic vegetation of the period, has been placed above the fossils. Owing to the incompleteness of our material this has been largely based on the reconstructions of *Camarasaurus*, an allied American form, by E. S. Christman in the American Museum of Natural History. The artist, Mr. Douglas S. Amund, has put some excellent work into our painting. His Excellency Sir John Goodwin has also given assistance by providing a striking little sketch showing the relative proportions of a modern horse and the giant Dinosaur.

In addition to the detailed description of this fossil in our Memoirs,⁸ a popular account of *Rhætosaurus brownei* was published in "The Australian Museum Magazine," vol. iii, July-September, 1927. In this article a photograph by Mr. L. C. Ball,

⁶ 1919, F. Chapman, Proc. Roy. Soc. Viet., 32 (n.s.), p. 12.

⁷ 1889, R. Lydekker, Cat. Foss. Rept. Brit. Mus., iii, p. 168.

⁸ 1926, Longman, Mem. Qld. Mus., viii, pt. 3, pp. 183-194; and 1927, Longman, Mem. Qld. Mus., ix, pt. 1, pp. 1-18, plates i-v.

Deputy Chief Government Geologist, showing the site of the discovery on Durham Downs, was reproduced. It is hoped that additional remains will be forthcoming from this locality later.

NEW RECORDS.

Among our records of Queensland vertebrate fossils from new localities are the following :—

Diprotodon australis Owen.

Mandibular fragment with one incomplete molar from the Flinders River, Maxwellton, W.Q. Presented by Mr. Rex W. Crane (F. 1791). The Flinders River region has yielded a rich store of marine Cretaceous fossils, but this specimen, which was picked up in the bed of the river at Maxwellton, must have come from recent deposits.

Diprotodon australis.

Mandibular fragment with remains of two molars from Bluff Downs, Mr. Ernest White's station, north-west of Charters Towers. Presented by Mr. C. M. Rogers (F. 1907). The head of a left humerus was also received. Mr. Michael Rogers, who forwarded these fossils, says that they were found "under the basalt outcrop of that country."

Diprotodon australis.

Maxillary fragment with two molars (F. 2019). Picked up by aboriginal stockman at the junction of the Dart and Broken Rivers, Urana Run, Collinvale, Bowen, N.Q. Presented by Mr. A. Garbutt, and received through Mr. J. A. Rheuben and the Department of Agriculture and Stock, Brisbane. The two molars, which are well preserved, represent an aged individual.

Diprotodon minor Huxley.

Mandibular fragment with symphysis and two incomplete incisors (F. 1822). Presented by the Rev. C. H. Massey. This was obtained near Murgon, S.E. Q., but was handed to donor without precise locality. The writer has shown that there are distinctive features in the symphyseal region between *Diprotodon australis* and *D. minor*.⁹

Nototherium sp.

Mandibular fragment with two molars (F. 2049). Near Logan Downs Station, Clermont, Q. Presented by Mr. Gordon A. Fairbairn. This fragment, which is much abraded, was "picked up on surface under Telegraph Line, about five miles from Logan Downs Station towards Grosvenor Downs."

Palorchestes sp.

Fragments of two molars (F. 1761), which are mainly alveolar, found at a depth of 40 feet in a well at Castle Creek, Rannes, S.E. Q. These were found by Mr. R. S. Philp and received through Professor H. C. Richards. These fragments may represent a new species, but the material is inadequate for precise determination.

⁹ 1926, Longman, Mem. Qld. Mus., vol. viii, p. 18.



Painting placed above the remains of *Rhotosaurus browni*, partly based on E. S. Christman's models of *Camarasaurus*, an allied American Dinosaur.

Artist: Douglas S. Annand.



Remains of *Rhotosaurus browni*, the Queensland Dinosaur, mounted on stand 25 feet in length in the Queensland Museum.